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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,055	06/22/2005	Thomas Tsai Hei Ma	0510US-TomMa	1327
23521 7590 03/11/2008 SALTAMAR INNOVATIONS 30 FERN LANE SOUTH PORTLAND, ME 04106				
EXAMINER NGUYEN, HOANG M				
ART UNIT 3748		PAPER NUMBER		
MAIL DATE 03/11/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/540,055

**Applicant(s)**

MA, THOMAS TSOI HEI

**Examiner**

Hoang M. Nguyen

**Art Unit**

3748

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date 6/22/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Applicant's response to the restriction requirement dated January 16, 2008, has been fully considered.

Applicant argued the restriction requirement should be withdrawn because this application is filed under rule 371. The Examiner agrees and withdraws the restriction.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by US 4917054 (Schmitz).

Schmitz discloses a six-stroke internal combustion engine comprising 5 cylinders and pistons, figures 4a-4d disclose the operation of the ICE, cylinder 1 acting as a gas compressor having intake stroke in figure 4a, compression stroke in figure 4b, filling stroke in figure 4c and exhaust stroke in figure 4d.

Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by US 4367700 (Pace).

Pace discloses a six-stroke internal combustion engine comprising cylinders and pistons, figure 4 disclose the operation of the ICE, cylinder 12 having intake stroke 1,

Art Unit: 3748

compression stroke 2, ignition stroke 3, exhaust stroke 4, then stroke 5 for filling heated air, and stroke 6 for emptying the heated air.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4917054 (Schmitz) in view of U.S. 4630447 (Webber). Schmitz discloses all the claimed subject matter as set forth above in the rejection of claim 11, but does not disclose a matrix heat regenerator inside the cylinder. Webber is relied upon to disclose a matrix heat regenerator 28 inside a cylinder with chamber 30 in figure 5. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a matrix heat regenerator in the chamber of Schmitz as taught by Webber for the purpose of regenerating heat inside the chamber.

Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4367700 (Pace) in view of U.S. 4630447 (Webber). Pace discloses all the claimed subject matter as set forth above in the rejection of claim 12, but does not disclose a matrix heat regenerator inside the cylinder. Webber is relied upon to disclose a matrix heat regenerator 28 inside a cylinder with chamber 30 in figure 5. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to

Art Unit: 3748

provide a matrix heat regenerator in the chamber of Pace as taught by Webber for the purpose of regenerating heat inside the chamber.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Delesalle, Hu, Skay, disclose ICE having more than 4 strokes.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Nguyen whose telephone number is (571) 272-4861. The examiner can normally be reached on Tuesday--Friday from 12:30 AM to 10:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hoang M Nguyen/  
Primary Examiner, Art Unit 3748

HOANG NGUYEN  
PRIMARY EXAMINER  
ART UNIT 3748

Hoang Minh Nguyen  
3/10/2008